

In the Claims:

Please cancel claims 1-12.

1 13. An integrated optical device formed in accordance with a process, comprising the  
2 steps 2 of:

3 providing a glass substrate having a base index of refraction;

4 providing a UV light beam;

5 focusing said beam on a portion of said glass substrate in order to form a region of 6  
6 increased refraction; and

7 scanning an elongated region of said glass substrate with said beam in order to define a first  
8 elongated optical channel having an increased index of refraction relative to said base index of  
9 refraction, said first optical channel for guiding light transmitted there along.

1 14. The integrated optical device as recited in claim 13, formed in accordance with a process,  
2 including the step of:

3 forming a plurality of second elongated optical channels in said glass substrate, wherein  
4 said first optical channel is operative for transmitting light to said plurality of second elongated  
5 optical channels such that said transmitted light is divided among said plurality of second  
6 elongated optical channels, thereby forming an optical beamsplitter.

1 15. The integrated optical device as recited in claim 14, formed in accordance with a process,  
2 including the step of:

3 forming at least one thermo-optic switch across at least one of said second elongated optical  
4 channels so as to form an optical switching device for switching light transmitted through said  
5 first optical channel to a selected one of said second optical channels.

1 16. The integrated optical device of claim 13, wherein said first optical channel receives a multi-  
2 wavelength light beam, formed in accordance with a process, including the steps of:

3 providing a beam splitter for splitting said multi-wavelength light beam into a plurality of  
4 multi-wavelength light beams;

5           forming a plurality of second elongated optical channels for guiding said plurality of  
6 multi-wavelength light beams, wherein each said second elongated optical channel guides a  
7 selected one of said plurality of multi-wavelength light beams, wherein each said second  
8 elongated optical channel has a different length such that light transmitted there upon exits  
9 each said second optical channel with a different phase shift; and  
10           providing a lens region for refocusing said plurality of phase shifted multi-wavelength  
11 light beams into a plurality of narrow wavelength light beams of differing wavelengths,  
12 thereby forming an optical wavelength demultiplexer.

1   17.    The integrated optical device of claim 13, wherein said glass substrate is doped with  
2 dopants chosen from the group consisting essentially of Germanium, tin and Boron.

1   18.    The integrated optical device of claim 13, formed in accordance with a process, including  
2 the step of:  
3           encasing at least a portion of said elongated optical channel in a protective material.

1   19.    The integrated optical device of claim 13, wherein said protective material is glass.

1   20.    The integrated optical device of claim 13, wherein said protective material is doped glass.